

REMARKS

In the Office Action of July 6, 2006, claims 1-25 were rejected under 35 U.S.C. 101 as directed to non-statutory subject matter. Claims 1-25 were also provisionally rejected for obviousness-type double patenting over claims 1-8 of co-pending application no. 09/842,438.

I. Claim Amendments

As indicated in the claims section above, four claims were amended to correct typographical errors in the original application. In the fourth line of Claim 3, the equation defining the parameter α was inadvertently inverted in the derivation. In the third line of Claim 12, the equation defining MSkewness was incomplete, the exponent and right bracket having been inadvertently omitted from the claim based on the derivation shown in equation (42) on page 24, line 19. In the last line of Claims 21 and 24, the complex variable ς was incorrectly typed as ξ in specifying that $\varsigma \in C$, as had been stated on page 27, line 1.

II. Nonstatutory Subject Matter

In rejecting claims 1-25 under 35 U.S.C. § 101 as directed to non-statutory subject matter, the examiner relies on two grounds: the invention must be within the technological arts; and the invention fails to produce a useful, concrete and tangible result. The applicants respectfully traverse this rejection.

The examiner cites no authority for application of this “technological arts” standard for non-statutory subject matter. None exists. The technological arts test was rejected by the Patent Office Boards of Patent Appeals and Interferences in Ex Parte Lundgren, 76 USPQ 2d 1385 (Bd. Pat. App. & Int., 2005).

Lundgren involved a process claim directed to a method of compensating managers while reducing incentives for collusion among competing managers. The Examiner had relied on In re Musgrave, 431 F. 2d 882, 167 USPQ 280 (CCPA 1970); In re Toma, 575 F. 2d 872, 197 USPQ 852; and Ex parte Bowman, 61 USPQ 2d 1669 (Bd. Pat. App. & Int. 2001) (non-presidential) as establishing a separate “technological arts” test.

The board in Lundgren could find no such test:

“We do not view the court’s statement in *Musgrave* in regard to the technological

arts to have created a separate ‘technological arts’ test in determining whether a process is statutory subject matter. Indeed, the court stated as much in *Toma*.” 76 USPQ 2d at 1387.

Bowman was dismissed as non-precedential. And the Board concluded:

“Our determination is that there is currently no judicially recognized separate ‘technological arts’ test to determine patent eligible subject matter under § 101. We decline to create one. Therefore, it is apparent that the examiner’s rejection can not be sustained.” 76 USPQ 2d at 1388.

Similarly, the second prong of the rejection is also groundless. Again, no case law is cited to support the Examiner’s position. The applicable case law is In re Alappat, 33 F.3d 1526, 31 USPQ 2d 1545 (Fed. Cir. 1994); State Street Bank v. Signature Financial, 149 F.3d 1368, 47 USPQ 2d 1596 (Fed. Cir. 1998); and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ 2d 1447 (Fed. Cir. 1999). Each of these decisions found that the claims at issue satisfied the requirements of 35 U.S.C. 101 because they produced a “useful concrete and tangible result.” However, none of these decisions require that the claims perform physical transactions that would have produced useful, concrete and tangible results as the Examiner seems to require.

The Examiner also fails to indicate what is meant by a useful, concrete and tangible result. Applicants submit that Alappat, State Street, and AT&T equate this requirement to the utility requirement of 35 U.S.C. 101 and that applicants’ invention meets this requirement as well. In Alappat the invention at issue was apparatus for creating a smooth waveform display. It achieved this result by an interpolation process. The Federal Circuit reversed the Board’s affirmance of the Examiner’s rejection of the claim:

“This is not a disembodied mathematical concept which may be characterized as an ‘abstract idea,’ but rather a specific machine to produce a useful, concrete and tangible result.”

“The fact that the four claimed means elements function to transform one set of data to another through what may be viewed as a series of mathematical calculations does not alone justify a holding that the claim as a whole is directed to nonstatutory subject matter.” 33 F.3d at 1544, 31 USPQ 2d at 1557.

Similarly, in State Street the claim at issue was a system for calculating a share price for certain investment funds. Again, the Federal Circuit found this system to constitute patentable subject matter:

“Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces ‘a useful, concrete and tangible result’—a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades.” 47 USPQ 2d at 1601.

And in AT&T, the claim at issue was a method claim for generating a message record that included a primary interexchange carrier (PIC) indicator that was used to facilitate differential billing. While the PIC indicator was generated using simple mathematical principles (Boolean arithmetic), the Federal Circuit found the method to constitute patentable subject matter:

“The PIC indicator represents information about the call recipient’s PIC, a useful, non-abstract result that facilitates differential billing of long-distance calls made by an IXC’s subscriber. Because the claimed process applies the Boolean principle to produce a useful, concrete, tangible result without pre-empting other uses of the mathematical principle, on its face the claimed process comfortable falls within the scope of § 101.” 50 USPQ 2d at 1452.

Just as the systems and method of Alappat, State Street and AT&T are statutory because they produced a “useful, concrete, and tangible result,” so too the claims of the present application are statutory under 35 U.S.C. § 101 because they recite a method that produces a “useful, concrete and tangible result.” Specifically, the invention is a method of obtaining predictive information through the analysis of high-frequency financial data. Specification, p. 1, lines 12-13. An example of such data discussed in the application is foreign exchange rates. Information enabling prediction of the future behavior of foreign exchange rates is of practical utility to those skilled in mathematical finance. Spec., p. 2, lines 7-9. The present invention takes into account mathematical relationships obtained from technical analysis of financial markets. The results derived from calculations using these relationships have practical utility. As the application discusses, there is a need for development of rapid and efficient techniques for extracting and computing values to be used in predicting price behavior of a variety of financial instruments whose price data can be described by inhomogeneous time series. Spec., p. 3, line 17 to p. 3, line 14. The invention computes several different predictive factors, including return, momentum, and volatility. App. p. 3, lines 28-30. Persons skilled in the art of technical financial analysis will readily grasp the utility of each of these factors in making decisions regarding risk

management, e.g., trading strategies, over the financial instruments modeled by the process claimed. Moreover, the specification points to the paper by O.V. Pictet, et al., *Real-time trading models for foreign exchange rates*, 2(6) Neural Network World, 713-44 (1992) as discussing an application to which the method would successfully be applied.

The claims of the application recite applicants' method of calculating the values of one or more predictive factors. Just as the system of State Street for calculating a share price was found to produce a useful, concrete and tangible result, it is respectfully submitted that the claims of this application produce a useful, concrete, and tangible result.

In conclusion, since there is no requirement that the claims be within the technological arts and since the claims produce a useful, concrete and tangible result, the rejection of claims 1-25 under 35 U.S.C. 101 should be withdrawn.

III. Nonstatutory Double Patenting

The examiner further provisionally rejects claims 1 - 25 as being unpatentable over claims 1 – 8 of copending Application No. 09/842,438. Since this is a provisional nonstatutory rejection based on the Examiner's evaluation of obviousness between two pending applications, applicant understands that it is unnecessary to address these issues at this time. MPEP § 804. Should the copending application be granted prior to the grant of the present application, applicant will consider whether filing a terminal disclaimer over the present application is appropriate. MPEP § 804.02.

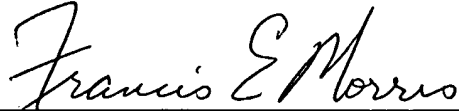
IV. Fees

Aside from the fee for an extension of time, no additional fee is believed to be due for filing this response. However, if a fee is due, please charge such fee to Morgan, Lewis & Bockius LLP Deposit Account No. 50-0310.

If the Examiner believes a telephone interview would expedite prosecution of this application, the Examiner is invited to call applicant's attorney at the number given below.

Date December 6, 2006

Respectfully submitted,

A handwritten signature in cursive script that reads "Francis E. Morris". The signature is written in dark ink and is positioned above a horizontal line.

Francis E. Morris

Reg. No. 24,615

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